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Olaf Abels

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MCGLEW & TUTTLE, PC
P.O. BOX 9227
SCARBOROUGH STATION
SCARBOROUGH, NY 10510-9227

EXAMINER

FERGUSON, MICHAEL P

ART UNIT

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3679

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,746	Applicant(s) ABELS, OLAF	
	Examiner MICHAEL P. FERGUSON	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 06 October 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/06/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because of the following:

The cross-hatching of elements **1,2,10,11**, shown in cross-sectional view in Figures 1-9, is improper based on the material of such elements.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1, 4-7, 9, 13 and 16-20 are objected to because of the following informalities:

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Claim 1 (line 3) recites "the ball housing". It should recite --the housing--.

Claim 4 (line 1) recites "with claim 1". It should recite --with claim 3--.

Claim 4 (lines 2-4) recites "said sealing area or both said sealing area and another sealing area, has/have a non-positive and/or positive-locking connection or". It should recite --said pivot-side sealing area or both said pivot-side sealing area and said housing-side sealing area, has/have a non-positive, positive-locking connection or--.

Claim 5 (line 3) recites "is preferably arranged close to the at least one said sealing area". It should recite --is arranged close to said pivot-side sealing area--.

Claim 6 (line 2) recites "said sealing area". It should recite --said pivot-side sealing area--.

Claim 6 (line 3) recites "is preferably arranged". It should recite --is arranged--.

Claim 7 (line 3) recites "said sealing area". It should recite --said pivot-side sealing area--.

Claim 9 (line 2) recites "said sealing area". It should recite --said pivot-side sealing area--.

Claim 9 (line 3) recites "possible the sealing of". It should recite --possible sealing of--.

Claim 9 (line 4) recites "at said pivot or at the housing". It should recite --at said pivot--.

Claim 13 (line 3) recites "rubber, preferably with". It should recite --rubber with--.

Claim 16 (line 2) recites "said pivot sealing area at least one of said pivot sealing". It should recite --said pivot-side sealing area, at least one of said pivot-side sealing--.

Claim 17 (line 3) recites "pivot sealing area". It should recite --pivot-side sealing area--.

Claim 18 (line 2) recites "said sealing area". It should recite --said pivot-side sealing area--.

Claim 19 (line 2) recites "pivot sealing area". It should recite --pivot-side sealing area--.

Claim 20 (line 2) recites "said pivot". It should recite --said ball pivot--.

For the purpose of examining the application, it is assumed that appropriate correction has been made.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships which render the claim indefinite are as follows:

Claim 16 (line 1-3) recites "further comprising another sealing area adjacent to said pivot sealing area at least one of said pivot sealing area and said another sealing

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area being one of non-positively connected to said jacket area". Claim 16 fails to clearly and positively claim the structural engagement and functional relationship between the another sealing area and each of pivot-side sealing area and the jacket area of the sealing bellows, the housing and the ball pivot.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 5-11 and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by ZF Lemforder Metallwaren₁ (WO 02/077470).

As to claim 1, ZF Lemforder Metallwaren₁ discloses a sealing bellows of a ball-and-socket joint, with a ball, a pivot **3** originating from the ball and with a housing **11** accommodating the ball, the sealing bellows extending between the pivot and the housing and the sealing bellows having comprising:

a pivot-side sealing area **2,7**;

a jacket area **1**; and

a housing-side sealing area, and the jacket area consisting of an elastomeric material, the pivot-side sealing area of the sealing bellows consisting of a material **7** that differs from the material **1** used for the jacket area of the sealing bellows (Figures 1-5).

As to claim 2, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the material **7** used for the pivot-side sealing area **2,7** is an elastomer (Figure 1).

As to claim 5, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the jacket area **1** has at least one reinforcing element **4**, which is arranged close to the pivot-side sealing area **2,7** (Figure 1).

As to claim 6, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the pivot-side sealing area **2,7** has at least one reinforcing element **4,5** which is arranged close to the jacket area **1** (Figure 1).

As to claim 7, ZF Lemforder Metallwaren₁ discloses a sealing bellows comprising a reinforcement element **4,5** provided in at least one of the jacket area **1** and the pivot-side sealing area **2,7** wherein the reinforcing element consists of plastic and/or metal (Figure 1, page 3 liens 15-19).

As to claim 8, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the reinforcing element **4,5** is arranged rotationally symmetrically in relation to the pivot **3** (Figures 1 and 4).

As to claim 9, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the jacket area **1** and/or the pivot-side sealing area **2,7** have at least one sealing lip **2**, which makes possible sealing of the interior space of the ball-and-socket joint at the pivot **3** (Figure 1).

As to claim 10, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein an additional sealing element **4** is provided at least at one of the sealing areas **2,7** (Figure 1).

As to claim 11, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein at least one centering element **4,5** is provided at least between the pivot **3** and the pivot-side sealing area **2,7** (Figure 1).

As to claim 14, ZF Lemforder Metallwaren₁ discloses a sealing bellows of a ball-and-socket joint having a ball pivot **3** and a housing **11** accommodating a ball of the ball pivot, the sealing bellows extending between the ball pivot and the housing, the sealing bellows comprising:

- a pivot-side sealing area **2,7**; and

- a jacket area **1**, the jacket area being formed of an elastomeric material, the pivot-side sealing area consisting of a material **7** that differs from the material **1** forming the jacket area (Figures 1-5).

As to claim 15, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the material **7** forming the pivot-side sealing area **2,7** is an elastomer.

As to claim 16, ZF Lemforder Metallwaren₁ discloses a sealing bellows comprising another sealing area (constituted by a housing-side sealing area of the sealing bellows; Figure 5) adjacent to the pivot-side sealing area **2,7** at least one of the pivot-side sealing area and the another sealing area being one of non-positively connected to the jacket area, positive- lockingly connected to the jacket area and connected in substance with the jacket area (Figure 1).

As to claim 17, ZF Lemforder Metallwaren₁ discloses a sealing bellows comprising a reinforcing element **4** within the jacket area **1**, the reinforcing element being arranged close to the pivot-side sealing area **2,7** (Figure 1).

As to claim 18, ZF Lemforder Metallwaren₁ discloses a sealing bellows comprising a reinforcing element **4,5** within the pivot-side sealing area **2,7**, the reinforcing element being arranged close to the jacket area **1** (Figure 1).

As to claim 19, ZF Lemforder Metallwaren₁ discloses a sealing bellows comprising a reinforcement element **4,5** provided in at least one of the jacket area **1** and the pivot-side sealing area **2,7** wherein the reinforcing element is formed of plastic and/or metal (Figure 1, page 3 lines 15-19).

As to claim 20, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the reinforcing element **4,5** is arranged rotationally symmetrically in relation to the ball pivot **3** (Figures 1 and 4).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZF Lemforder Metallwaren₁ in view of Turner (US 2,388,097).

As to claim 3, ZF Lemforder Metallwaren₁ fails to disclose a sealing bellows wherein both the pivot-side sealing area and the housing-side sealing area consist of an elastomeric material different from the material of the jacket area.

Turner teaches a sealing bellows wherein both a rod-side sealing area **12** and a housing-side sealing area **12** consist of an elastomeric material different from the

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material of a jacket area **10** of the sealing bellows; harder, stiffer material end-sealing areas **12** provide for a stronger seal at both ends of sealing bellows **10** and form a firm, more durable connection between the sealing areas and housings **20,21** (Figures 1-3, page 1 column 1 lines 37-53, page 2 column 1 line 45-column 2 line 3). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sealing bellows disclosed by ZF Lemforder Metallwaren₁ wherein both sealing areas consist of an elastomeric material different from the material of the jacket area as taught by Turner in order to provide for a stronger seal at both end sealing areas of sealing bellows and form a firm, more durable connection between the sealing areas and both the pivot and the housing.

As to claim 4, ZF Lemforder Metallwaren₁ discloses a sealing bellows wherein the pivot-side sealing area **2,7** has a positive-locking connection or connection in substance with the jacket area **1** (Figure 1).

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over ZF Lemforder Metallwaren₁ in view of Nakamura (US 5,431,601).

As to claim 12, ZF Lemforder Metallwaren₁ fails to disclose a sealing bellows wherein the jacket area consists of chloroprene rubber with a hardness of approx. 50 \pm 10 Shore A. ZF Lemforder Metallwaren₁ does not disclose any structural or functional significance as to the specific material of the jacket area, other than that the sealing bellows consists of a rubber elastomer.

Nakamura teaches a sealing bellows **B** wherein a jacket area consists of chloroprene rubber; grease resistant chloroprene rubber material providing for a more

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durable, stronger sealing bellows which reliably seals grease within the sealing bellows (Figure 13, column 5 lines 47-50). Nakamura does not disclose any structural or functional significance as to the specific hardness of the chloroprene rubber.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sealing bellows disclosed by ZF Lemforder Metallwaren₁ wherein the jacket area consists of a chloroprene rubber as taught by Nakamura in order to provide for a more durable, stronger sealing bellows which reliably seals grease within the sealing bellows.

The applicant is reminded that the selection of a known material based upon its suitability for the intended use, wherein there is no structural or functional significance disclosed as to the specific material of an element, is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sealing bellows disclosed by ZF Lemforder Metallwaren₁ in view of Nakamura wherein the jacket area consists of a chloroprene rubber with a hardness of approx. 50 ± 10 Shore A as Nakamura does not disclose any structural or functional significance as to the specific hardness of the chloroprene rubber, and as such selection of material is a design consideration within the skill of the art which would yield expected and predictable results.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over ZF Lemforder Metallwaren₁ in view of ZF Lemforder Metallwaren₂ ((WO 02/093028).

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As to claim 13, ZF Lemforder Metallwaren₁ fails to disclose a sealing bellows wherein at least one the sealing areas consists of a nitrile rubber with a hardness of approx. 70 ± 10 Shore A. ZF Lemforder Metallwaren₁ does not disclose any structural or functional significance as to the specific material of the sealing areas, other than that the sealing bellows consists of a rubber elastomer.

ZF Lemforder Metallwaren₂ teaches a sealing bellows **8,11** wherein a sealing area consists of a nitrile rubber having a high Shore hardness; HNBR nitrile rubber material providing for a more durable, stronger sealing bellows (Figures 1 and 2d, page 5 lines 24-27). ZF Lemforder Metallwaren₂ does not disclose any structural or functional significance as to the specific hardness of the nitrile rubber. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sealing bellows disclosed by ZF Lemforder Metallwaren₁ wherein one of the sealing areas consists of a nitrile rubber as taught by ZF Lemforder Metallwaren₂ in order to provide for a more durable, stronger sealing bellows.

The applicant is reminded that the selection of a known material based upon its suitability for the intended use, wherein there is no structural or functional significance disclosed as to the specific material of an element, is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sealing bellows disclosed by ZF Lemforder Metallwaren₁ in view of ZF Lemforder Metallwaren₂ wherein at least one the sealing areas consists of a nitrile rubber with a hardness of approx. 70 ± 10 Shore A as ZF

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Lemforder Metallwaren₂ does not disclose any structural or functional significance as to the specific hardness of the nitrile rubber, and as such selection of material is a design consideration within the skill of the art which would yield expected and predictable results.

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patents show the state of the art with respect to sealing bellows:

Ihnacik, Jr. (US 3,279,833), Schonfoff et al. (US 7,192,214) and Kogstrom (US 2,921,809) are cited for pertaining to sealing bellows comprising a pivot-side sealing area and a jacket area consisting of different materials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL P. FERGUSON whose telephone number is (571)272-7081. The examiner can normally be reached on M-F (6:30am-3:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPF
09/10/08

/Michael P. Ferguson/
Primary Examiner, Art Unit 3679